

What is claimed:

Claim 1. A preparation method of organs functioning in vivo when in vitro induced organ is transplanted into a recipient of the same species, wherein the preparation method of in vitro induced organ for transplantation is characterized in that the organ is cultured to a certain stage corresponding to the stage of the recipient.

Claim 2. The preparation method of in vitro induced organ for transplantation according to claim 1 characterized in that a certain stage corresponding to the recipient is the same stage as the recipient.

Sub A
Claim 3. The preparation method of in vitro induced organ for transplantation according to any one of claims 1 or 2 characterized in that the certain stage is examined by using genome DNA which expresses corresponding to the stage of the in vitro induced organ as a molecular marker.

Claim 4. The preparation method of in vitro induced organ for transplantation according to any one of claims 1 to 3 characterized in that the in vitro induced organ is an organ induced from ectoderm region which has been cut off from the blastula.

Claim 5. The preparation method of in vitro induced organ for transplantation according to any one of claims 1 to 4 characterized in that in vitro induction takes place in the presence of TGF (Transforming Growth Factor)- β family.

Claim 6. The preparation method of in vitro induced organ for transplantation according to claim 5 characterized in that TGF (Transforming Growth Factor)- β family is activin.

Sub A
Claim 7. The preparation method of in vitro induced organ for transplantation according to any one of claims 1 to 4 characterized in that in vitro induction takes place in the presence of activin and retinoic acid.

Claim 8. The preparation method of in vitro induced organ for transplantation according to any one of claims 1 to 7 characterized in that the organ is selected from kidney, heart, pancreas, liver, enteric canal, notochord, skeletal muscle, leukocyte, erythrocyte and lymphocyte.

Claim 9. The preparation method of in vitro induced organ for transplantation according to any one of claims 1 to 8 characterized in that a living organism of the recipient is embryo.

Claim 10. The preparation method of in vitro induced organ for transplantation according to any one of claims 1 to 9 characterized in that the recipient belongs to vertebrate.

Claim 11. An in vitro induced organ for transplantation characterized in that the organ is prepared by the preparation method of in vitro induced organ for transplantation according to any one of claims 1 to 10.

Claim 12. An evaluation method of in vitro induced organ of non-human animal characterized in that in vitro induced organ of non-human animal is transplanted into a living organism of non-human recipient of the same species.

Claim 13. An evaluation method of in vitro induced organ of non-human animal characterized in that the in vitro induced organ of non-human animal is cultured up to a certain stage corresponding to the stage of non-human recipient of the same species, wherein the cultured organ is in vivo transplanted into the recipient.

Claim 14. The evaluation method of in vitro induced organ of non-human animal according to claim 13 characterized in that the certain stage is examined by using genome DNA which expresses corresponding to the stage of in vitro induced organ as a molecular marker.

Claim 15. The evaluation method of in vitro induced organ of non-human animal according to either one of claims 13 or 14 characterized in that the in vitro induced organ is an organ induced from ectoderm region which has

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